

REMARKS

Claims 1-29 are in this application and are presented for consideration. By this Amendment, Applicant has amended claims 1, 13 and 29.

Claims 1-28 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly the subject matter which Applicant regards as the invention.

Applicant has amended claims 1 and 13 paying close attention the Examiner's remarks. Applicant would like to thank the Examiner for the careful review of the claims. It is Applicant's position that the claims as now presented are clear and satisfy the requirements of the statute.

Claims 1-10 and 12-29 have been rejected under 35 U.S.C. 102(b) as being anticipated by Fimbel (DE 4016033).

The present invention relates to a method and device for positioning components to be joined together. Applicant has found that prior art solutions of holding components as a whole, particularly automotive body shells, have high operating costs and occupy too much space while disadvantageously having a limited model flexibility and are unsuitable for holding different geometrically shaped components. The present invention advantageously provides a device for positioning components that lowers operating costs and reduces space consumption. The present invention comprises a movable central module having at least three multiaxially movable articulated arms. The central module moves in multiaxial directions. The central module is positioned such that the central module is within an inner space defined within an automobile

body part. The articulated arms then extend from a folded position to a clamping position to support the component while the component is worked on and assembled with additional components. Once the assembly has been completed, the articulated arms are then returned to the folded position so that the central movable module is advantageously removed through an opening in the assembled components, such as through an opening where the windshield would normally be applied in an automotive body shell. The present invention advantageously provides for a space-saving device that has a high model flexibility that can be adapted to hold differently sized components. The prior art as a whole fails to provide such features or advantages.

Fimbel discloses an industrial robot that handles parts and objects. The industrial robot has a pedestal 16 and two hinged arms 12, 14 that pivot in a holder 10 on vertical parallel pivots 18, 20. The holder 10 is attached to the pedestal 16 by means of a vertical rotatable connector 50. The two arms 12, 14 each have an extension arm 30, 32 pivoting on main arms 22, 24. All the pivots 50, 18, 20, 26, 28 are vertical and parallel. Fimbel discloses another embodiment of the industrial robot in Figure 3. Figure 3 shows an industrial robot with a common vertical axis and a common horizontal axis about which two robot arms pivot. The robot arms 122, 124 pivot about a common axis of rotation. At the ends of the robot arms 122, 124 are tools 146, 148 which can be grippers, tongs or drills.

Fimbel fails to teach and fails to suggest the steps as featured in claims 1 and 29. Specifically, Fimbel fails to suggest a central module for multiaxial movement as claimed. At most, Fimbel discloses robot arms 122, 124 that are fixed to a stationary pedestal 116. The

stationary pedestal 116 of Fimbel does not move in multiaxial directions as provided in the present invention. In contrast, the central module is free to move in multiaxial directions. This is significant because the central module is able to move inside the interior of the automobile body part so that the articulated arms can be extended to support the part. This advantageously provides for a space-saving and compact device that has a high model flexibility that can be adapted to hold differently sized components. As the pedestal 116 of Fimbel is fixed and is not provided for multiaxial movement, Fimbel fails to disclose the remaining specific steps of the claimed method of claims 1 and 29. Fimbel makes no mention of placing the industrial robot with the robot arms 122, 124 in a folded position inside the interior of an automobile part. Further, Fimbel fails to provide any suggestion for re-folding the robot arms after the automobile parts have been assembled so that the pedestal 116 can be moved to a location outside of the assembled automobile parts. In fact, Fimbel does not disclose anything about the tools 146, 148 holding and bracing an automobile body part. It is significant that the articulated arms are folded into a folded position because it advantageously allows for a space-efficient, compact positioning device that can be inserted into an inner space of an automobile body part so that the articulated arms can be extended to support the part. Fimbel does not provide such an advantage since Fimbel fails to teach or suggest the specific steps of folding the arms of a central module into a folded position; moving the module into an inner space of an automobile body part and extending the arms to support the part; and re-folding the arms into a folded position and moving the module outside of the assembled parts. At most, Fimbel discloses a common industrial robot that is fixed along an assembly line and does not teach each step of the

claimed combination. Accordingly, Applicant respectfully requests that the Examiner favorably consider method claims 1 and 29 and all claims that depend thereon.

Fimbel fails to teach and fails to suggest a freely movable central module as recited in claim 13. As clearly disclosed in Fimbel, the robot arms 122, 124 are fixed to the stationary pedestal 116. The pedestal 116 of Fimbel does not move as compared to the central module of the present invention. It is significant in the present invention that the central module moves with a multiaxial movement because it allows the central module to pass through openings in the automobile body part, such as the windshield opening in a vehicle frame, so the arms connected to the module can be extended once the module is located in the interior of the part. The fact that the central module of the present invention is free to move and is not fixed advantageously allows the central module to be easily maneuvered and placed in a variety of automobile parts. In contrast to the present invention, the industrial robot of Fimbel has a pedestal 116 that is not movable and is fixed in position so that the industrial robot cannot be moved into position to support an automobile body part while the part is worked on and assembled with other parts. As such, the prior art as a whole takes a different approach and fails to teach the features or advantages of the claimed combination. Accordingly, Applicant respectfully requests that the Examiner favorably consider claim 13 and all claims that depend thereon.

Claim 11 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Fimbel.

As previously discussed above, Fimbel fails to teach or suggest the specific combination of steps as recited in claim 1. Specifically, Fimbel fails to suggest a central module for

multiaxial movement as claimed. The industrial robot of Fimbel is fixed via pedestal 116 and is not movable as compared to the freely movable central module of the present invention. As such, the references together do not suggest the combination of features claimed. One of ordinary skill in the art is presented with various concepts, but these concepts do not provide any direction as to combining the features claimed. All claims define over the prior art as a whole.

Favorable action on the merits is respectfully requested.

Respectfully submitted
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